

REMARKS

This invention provides for, *inter alia*, a process for producing a metal foam in a die-casting machine wherein the metal melt and the blowing agent are foamed in the die cavity. Applicants discovered that when the metal meal and the blowing agent are foamed in the die cavity under pressure, a metal foam that has a closed outer skin that has a smooth surface and a good integral structure in the interior is obtained.

Pursuant to 37 CFR 1.136(a) Applicants petition the Director to extend the time period to file a response to the outstanding Office Action by one (1) month; i.e., up to and including August 23, 2004. A check for \$ 110.00 is enclosed to cover the cost of this petition. Should any further fee be required, the Director is authorized to charge the additional fee to Deposit Account 50-0320.

Pursuant to the Restriction Requirement, Applicants amended the claims so that they read on a process that produces aluminum or aluminum alloy metal foams wherein the blowing agent is magnesium hydride. Applicants are making these changes without prejudice or the intention of creating estoppel and reserved the right to file a divisional application directed to the cancelled embodiments.

The Examiner's attention is directed to copending application USSN 10/162,978 and copending application 10/146,701. These applications are directed to processes for preparing metal foams and are allowed.

New claims 46 and 47 recite the presence of pressure, which is inherent in a die-casting machine. Support for the specific pressure is found in the first full paragraph on page 5 of the specification.

The Examiner is thanked for the courtesy of an interview conducted on August 3, 2004. During that interview Applicants' representatives argued that the present claims are patentable over JP 09-241,780 ("the Japanese patent") alone or taken in any fair combination with Knott, US 5,972,285. Applicants, through their representatives, urged that neither of these prior publications disclosed a process wherein the foaming of the metal melt and the blowing agent took place under pressure in the die cavity of a die-casting machine, let alone the improved results that are obtained when a metal is foamed in this manner.

Using the inventive process a foamed metal body is obtained that has a closed outer skin, a smooth surface and a good integral structure in the interior. One cannot obtain such a structure using a prior art process that does not foam the metal melt in a die-casting machine, such as in the process described in Knott. Applicants' representatives showed a sample obtained by the inventive process and a sample made by the process disclosed in Knott to the Examiner and photographs of these samples are appended hereto as Exhibits 1 and 2. In these Exhibits, the structure on the left is the foam structure according to the present invention and the one on the right is the foam structure obtained by the process disclosed in Knott. As can be seen the sample obtained by the inventive process, which is foamed under pressure, has a smoother outer surface that is not marked by bubbles formed during the foaming process. Further, it was argued that one of ordinary skill in the art would not be motivated to foam a metal under pressure since the expectation would be that the foamed structure would collapse on itself.

Moreover, Applicants' representatives indicated that they could not locate a decision from any court that held that an apparatus limitation does not impart patentability to a method claim; however, a decision in which an apparatus limitation made a process patentable was uncovered. In *In re Way*, 514 F.2d 1057 (CCPA 1975), the CCPA reversed a decision of the

Board of Appeals that apparatus limitations cannot support patentability of method claims and held that the method was patentable. *Id.* at 1060-62. Further, it was urged that Applicants' position is consistent with MPEP § 2116.01, which states:

All the limitations of a claim must be considered when weighing the differences between the claimed invention and the prior art in determining the obviousness of a process or a method claims.

(Emphasis original). Thus, in view of these arguments Applicants' requested reconsideration of the rejection.

Claims 1 to 7, 9 to 12, 15 to 18, 24 to 28, 30 to 39, 41 and 42 stand rejected under 35 USC § 103(a) for allegedly being unpatentable over the Japanese patent and claims 2, 7, 11, 16 to 18, 25 to 28, 30, 31, 32, 37, 41 and 42 stand rejected under 35 USC § 103(a) for allegedly being unpatentable over the Japanese patent in view of Knott. As these rejections suffer from the same deficiency, they will be discussed together. Applicants urge that neither the Japanese patent taken alone or taken with Knott suggests a process in which a metal melt is foamed with a blowing agent under pressure in a die cavity, let alone the beneficial effects that are obtained by the inventive process. Accordingly, reconsideration and withdrawal of this rejection are requested.

The inventive method is directed to a process for producing a metal foam in a die-casting machine wherein the metal melt and the blowing agent are foamed in the die cavity. Applicants discovered that when the metal melt and the blowing agent are foamed in the die cavity under pressure, a metal foam that has a closed outer skin, a smooth surface and a good foamed structure in the interior is obtained.

Applicants respectfully urge that neither the Japanese patent nor Knott suggests the inventive process. As discussed on page 3 of the present application, in the Japanese patent

the foam is obtained by the controlled release of blowing gases that result from melting the metal at temperatures that lie below the decomposition temperature of the blowing agent, dispersing the blowing agent in the metal melt and heating the matrix to temperature that releases the blowing gases. In the process disclosed in the Japanese patent, foaming does not occur in a die-casting machine under pressure and the Japanese patent does not provide any suggestion to foam the metal melt under these conditions.

Knott does not correct these deficiencies. Knott is completely silent with respect to foaming the metal melt with the blowing agent in a die cavity. In Knott the metal and the blowing agent are baked (see the Examples). Hence, Knott does not suggest the inventive process.

The Office Action argues that an apparatus limitation does not impart patentability to a method claim. For the reasons that follow, Applicants respectfully disagree. Further, if the Examiner persists in this position, it is requested that she provides a decision that supports her argument since Applicants could not find a Court that held that an apparatus limitation does not impart patentability to a method claim.

In determining the obviousness of a process or a method claims, all of the limitations of the all claim limitations must be considered and taught or suggested by the prior art; *In re Royka*, 490 F.2d 981 (CCPA 1974); MPEP § 2116.01. All words in a claim must be considered in judging the patentability of that claim against the prior art. *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970); *In re Ochiai*, 71 F.3d 1565, 1569 (Fed. Cir. 1995).

In *In re Way*, 514 F.2d 1057 (CCPA 1975), the CCPA case considered whether an apparatus limitation affects the patentability of a method claim. In *Way* the Board of Appeals affirmed the Examiner position that the process was not patentable because it would be obvious

to use the alloys disclosed in the prior art references for piercer points in the process and apparatus for making seamless metal tubing noting “[i]t is well settled that patentability of method claims cannot be predicated on apparatus limitations.” *Way* at 1060 (citing *Stalego v. Heymes*, 46 CCPA 772 (1959)).

However, the Court did not accept the Board’s position that the apparatus limitations in a method claim cannot be used to support its patentability and reversed the Board’s holding. *Id.* at 1063. The Court, after reviewing the prior art references, held that they did not anticipate or make obvious the disputed method claims because:

[t]he prior art references merely show the acknowledged prior art processes and apparatus for piercing hot billets to make seamless tubing upon which appellants have improved. The improvement resides solely in the composition of the alloy from which the piercer point is made. No other assertion of novelty is made. The solicitor’s brief admits that ‘neither reference discloses a piercing point made from the alloy *** mentioned in the claims.’

Id. at 1061. Therefore, the Court relied upon an apparatus limitation to support the patentability of a method claim, where it is the sole reason for its patentability. Hence, it is respectfully submitted that *Way* supports the proposition that all the limitations of a method claim must be considered, including those directed to an apparatus. It should be noted that the issue in *Stalego* was whether a junior patent was drawn to substantially the same subject matter as the counts of the interference and not whether a claim was patentable under Section 103 of the Patent Act.

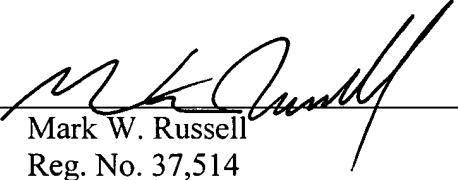
Thus, in view of the foregoing, it is urged that the present claims are patentable over the Japanese patent alone or taking in any fair combination with Knott. Accordingly, withdrawal of this rejection is respectfully requested.

Favorable action is earnestly solicited.

Respectfully submitted,

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